

Identification of Solar Cycle 23 Minimum from Solar UV Measurements: NOAA-9 and NOAA-11 SBUV/2, UARS SUSIM, UARS SOLSTICE

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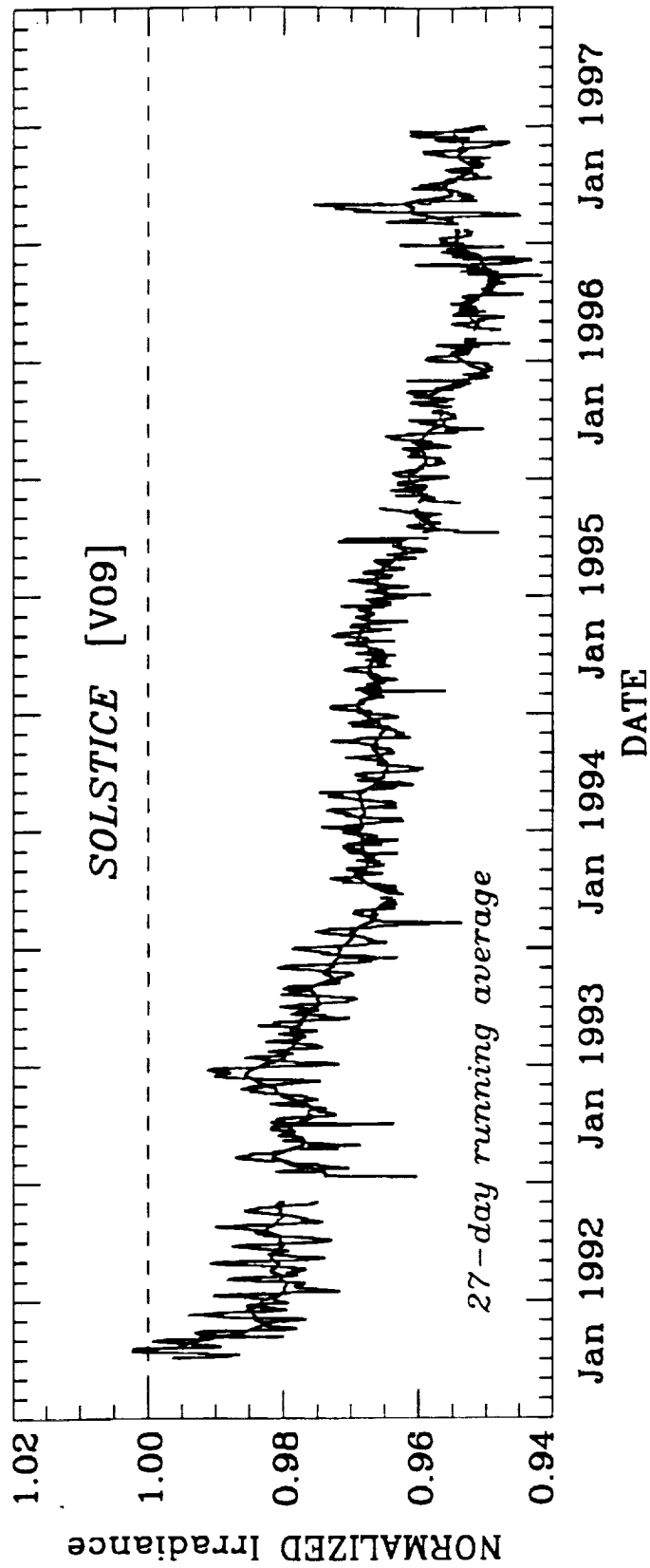
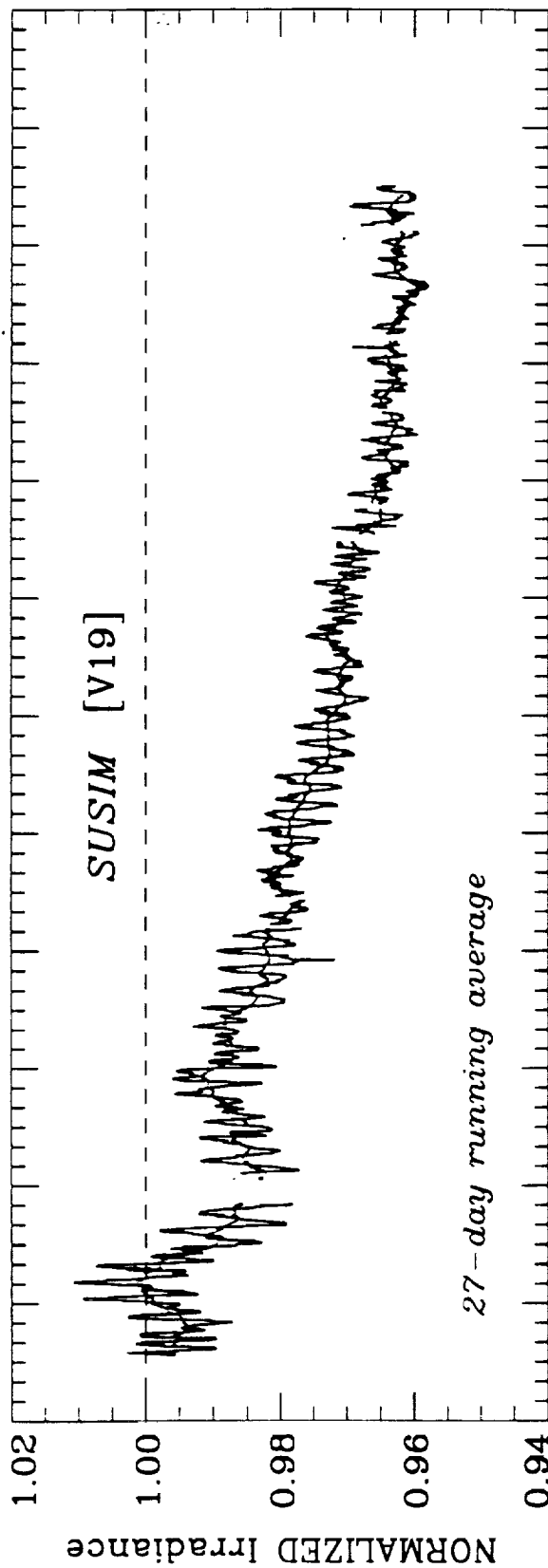
Fall 1997 AGU Meeting
12 December 1997
San Francisco, CA

Supported by NASA Grant NASW-4864

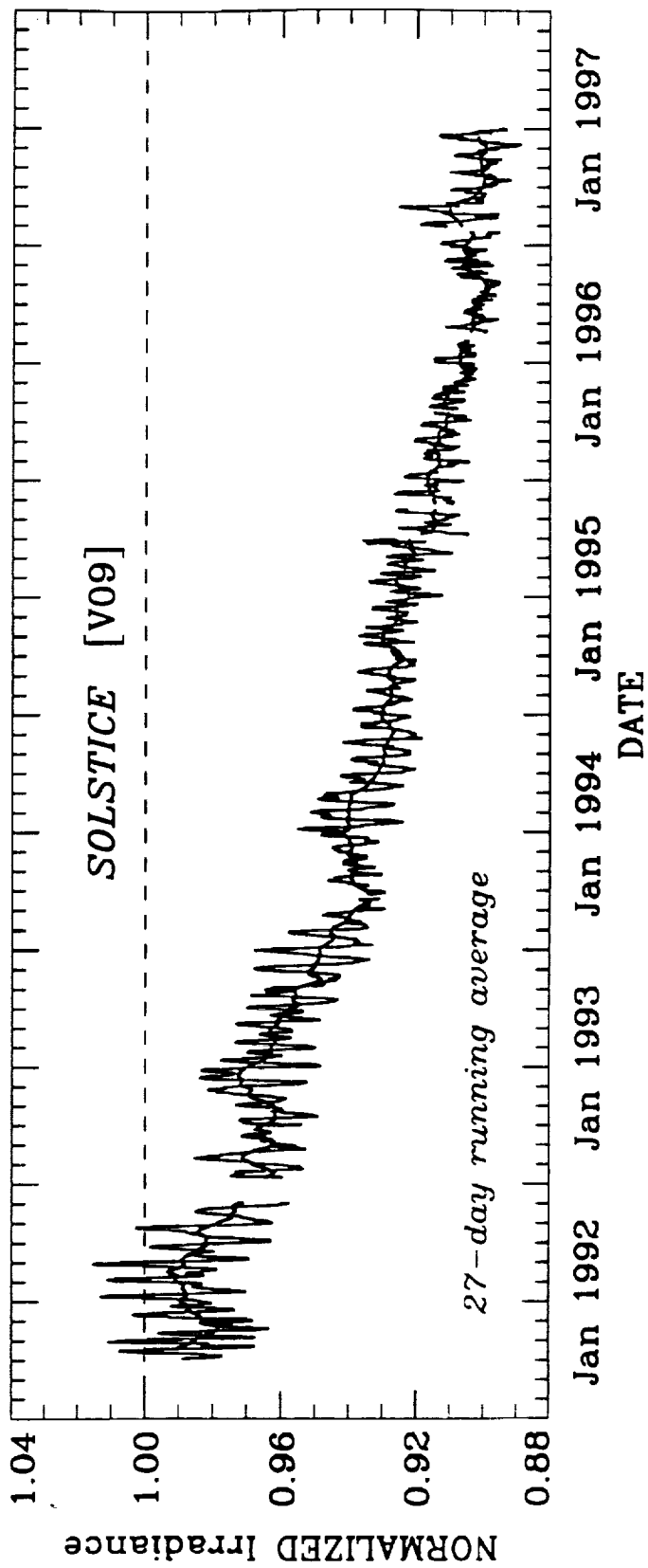
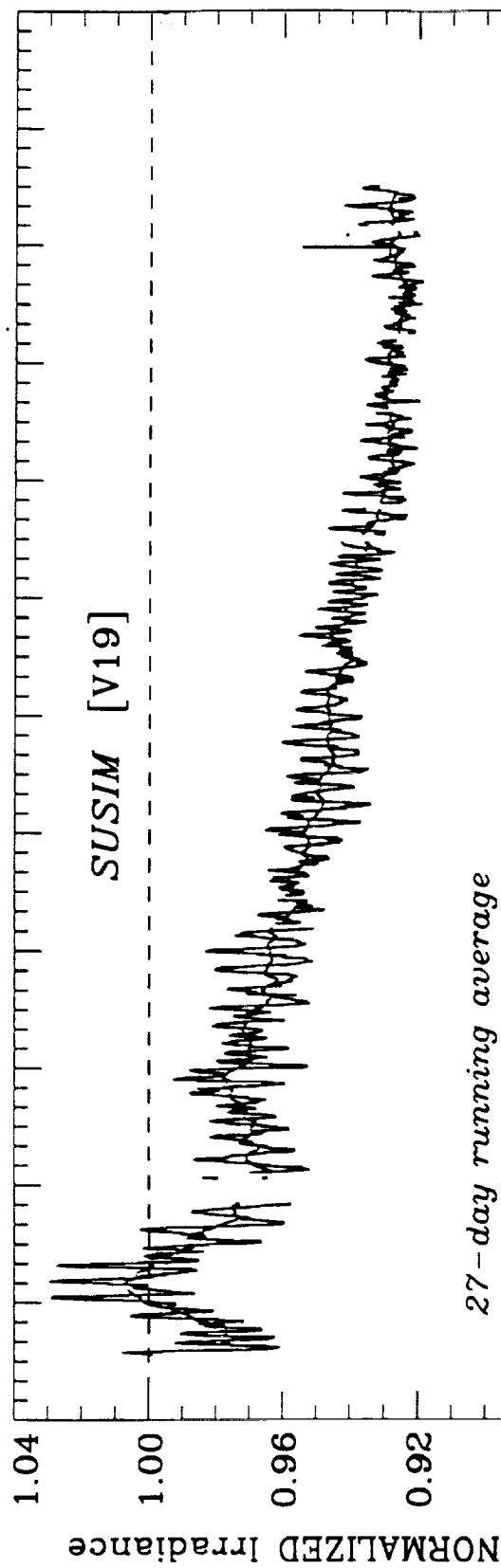
Solar Spectral UV Data for Cycle 22

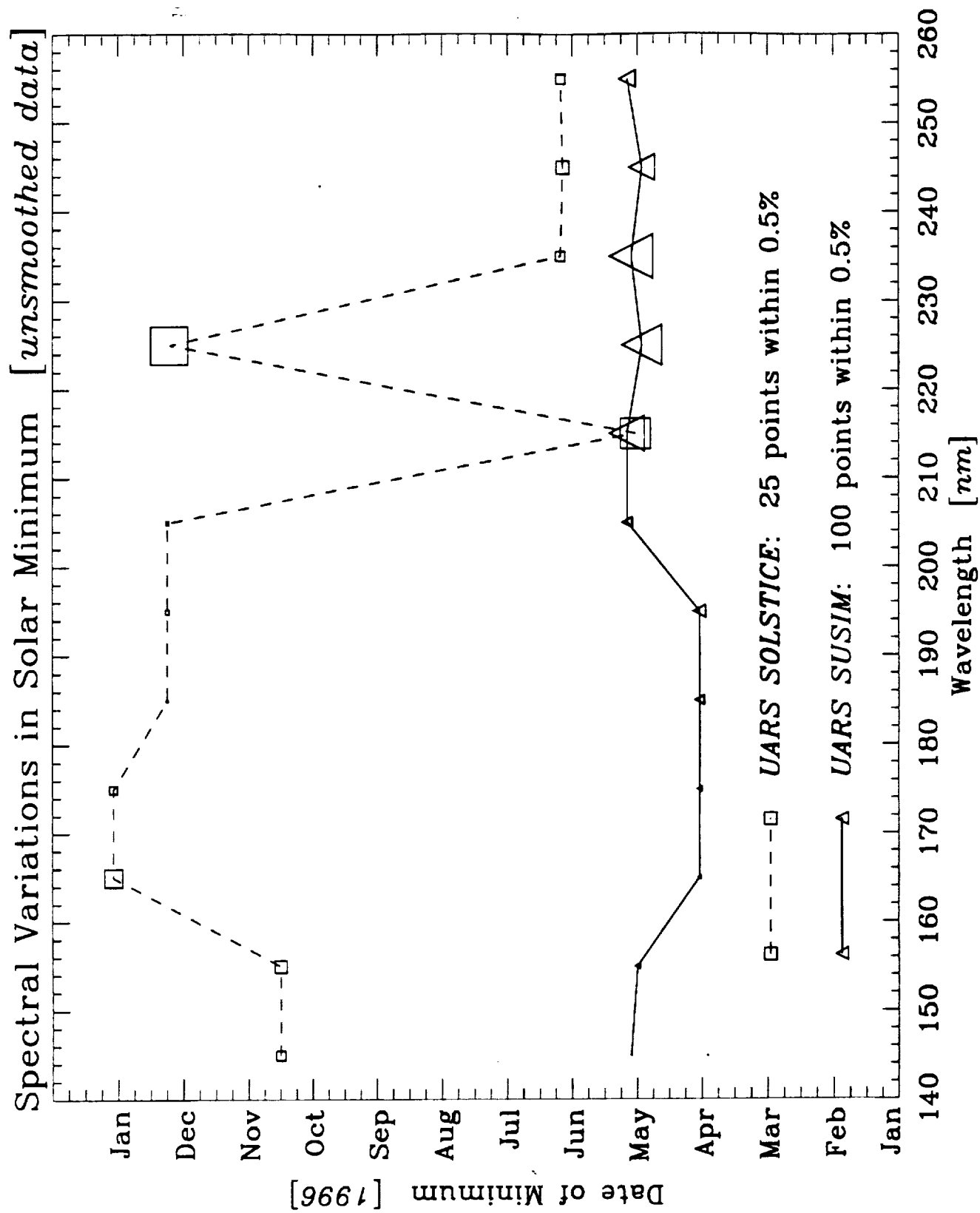
- **NOAA-9 SBUV/2**, *March 1985 – May 1997*
 - Long-term absolute calibration not yet available
 - Mg II index data continue through November 1997
- **NOAA-11 SBUV/2**, *February 1989 – October 1994*
 - Long-term calibration *via* SSBUV coincidences
 - Data do not reach solar minimum, but overlap UARS data during 1991-1994
- **UARS SUSIM**, *October 1991 – September 1996* [V19]
 - Long-term calibration *via* on-board calibration system
 - Currently operational
- **UARS SOLSTICE**, *October 1991 – December 1996* [V09]
 - Long-term calibration *via* on-board calibration system
 - Currently operational

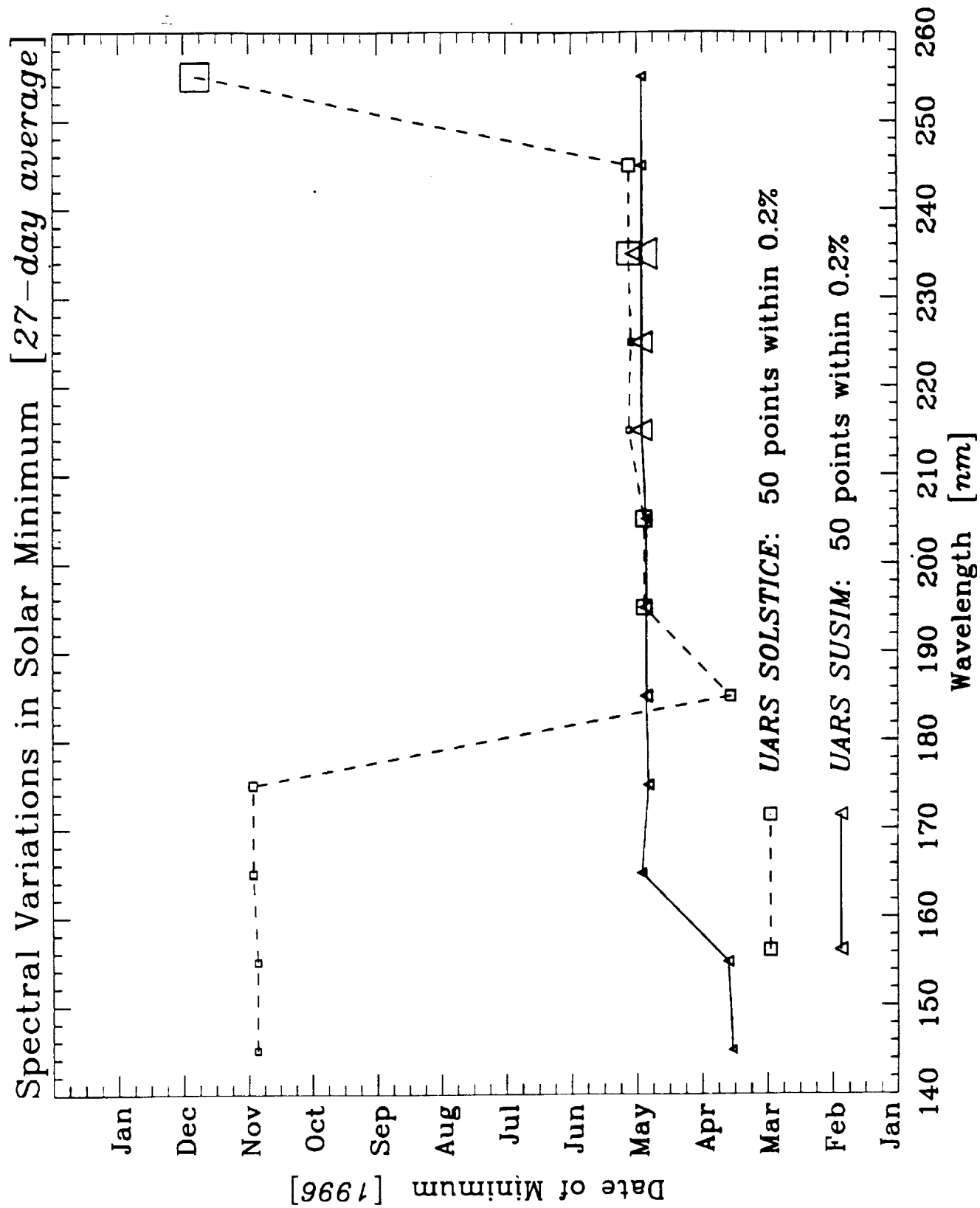
Solar Irradiance Data at 240–250 nm

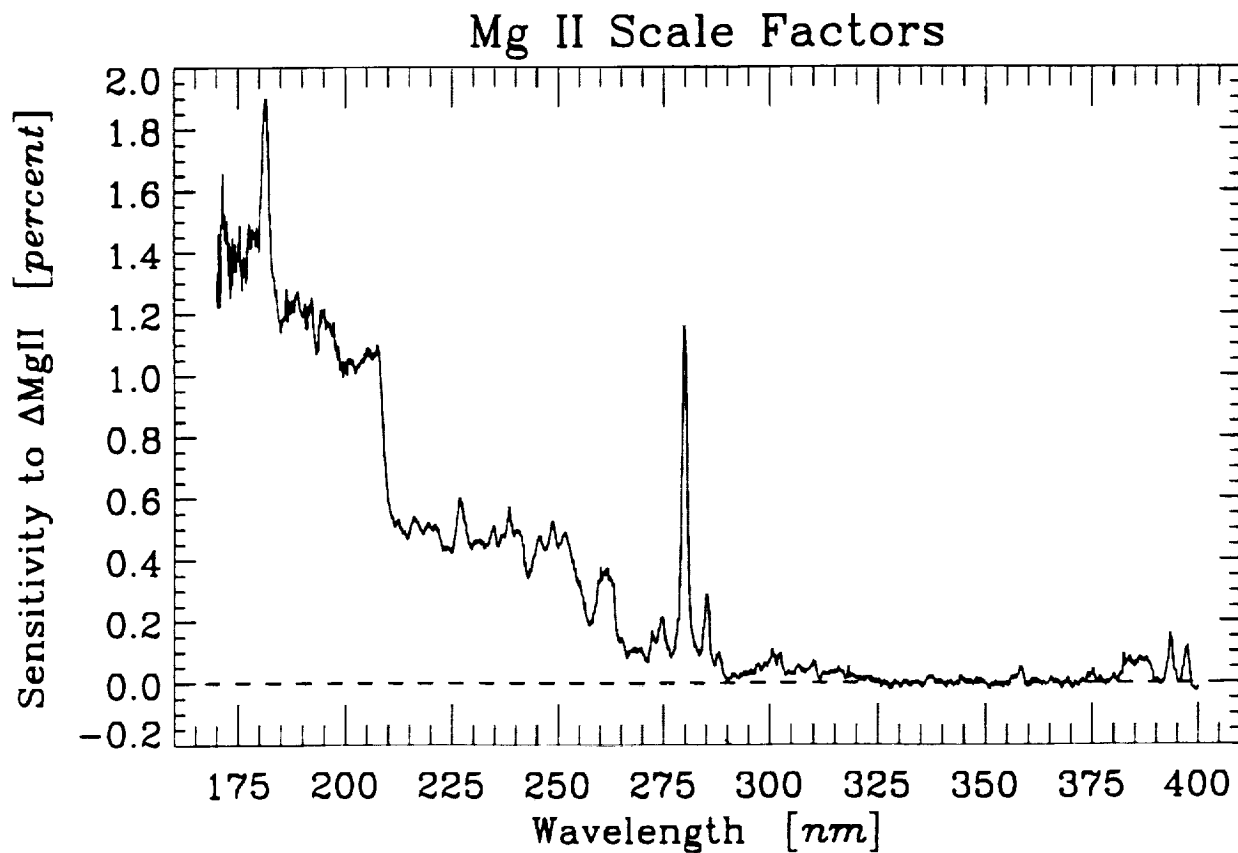
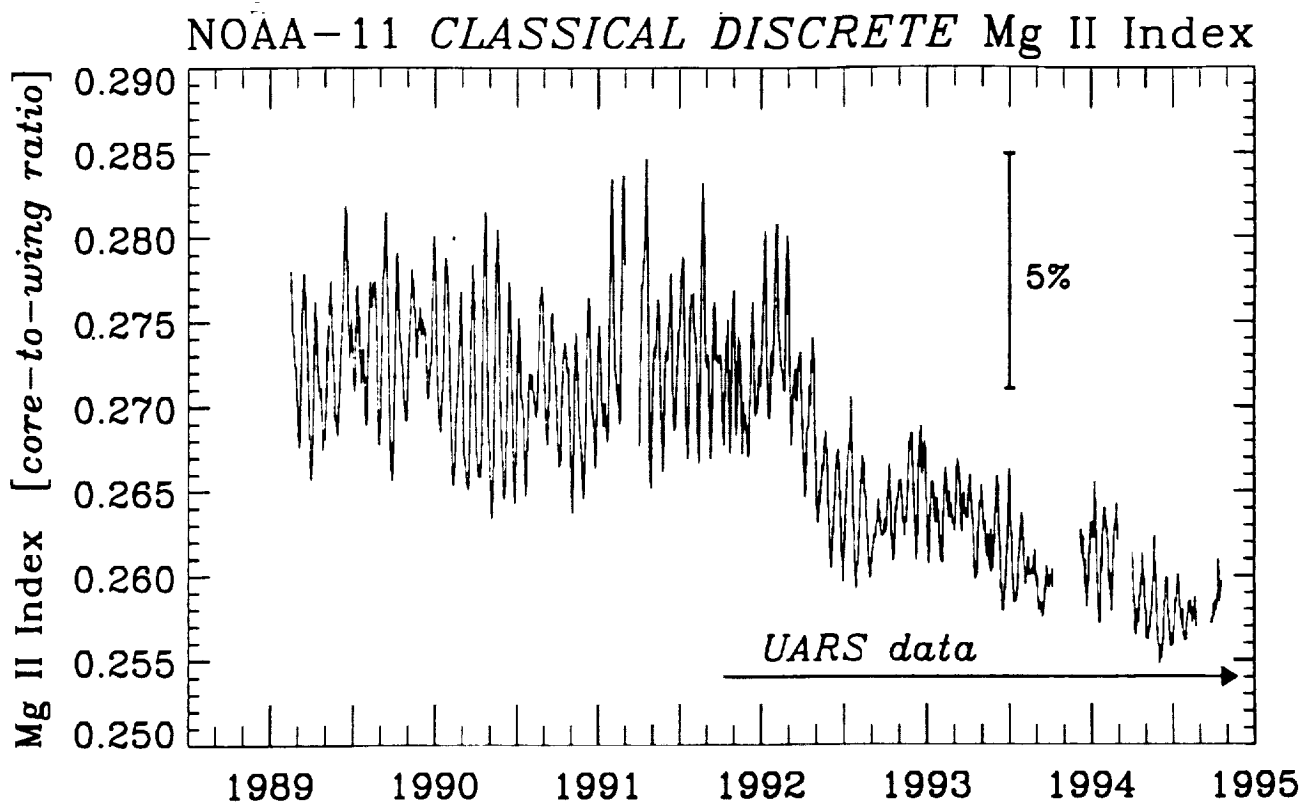


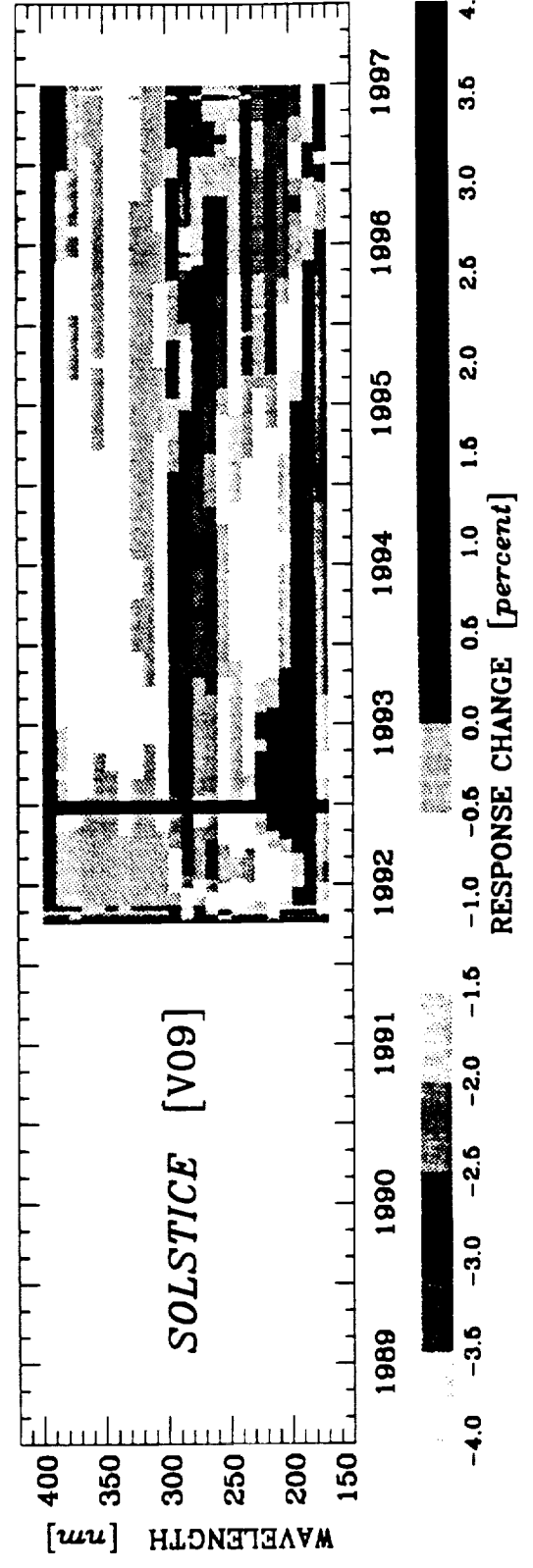
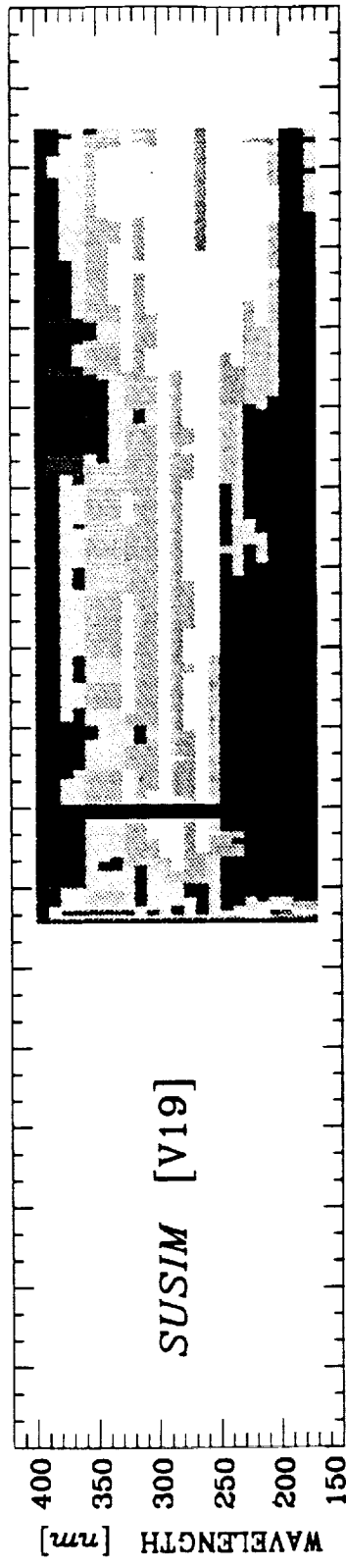
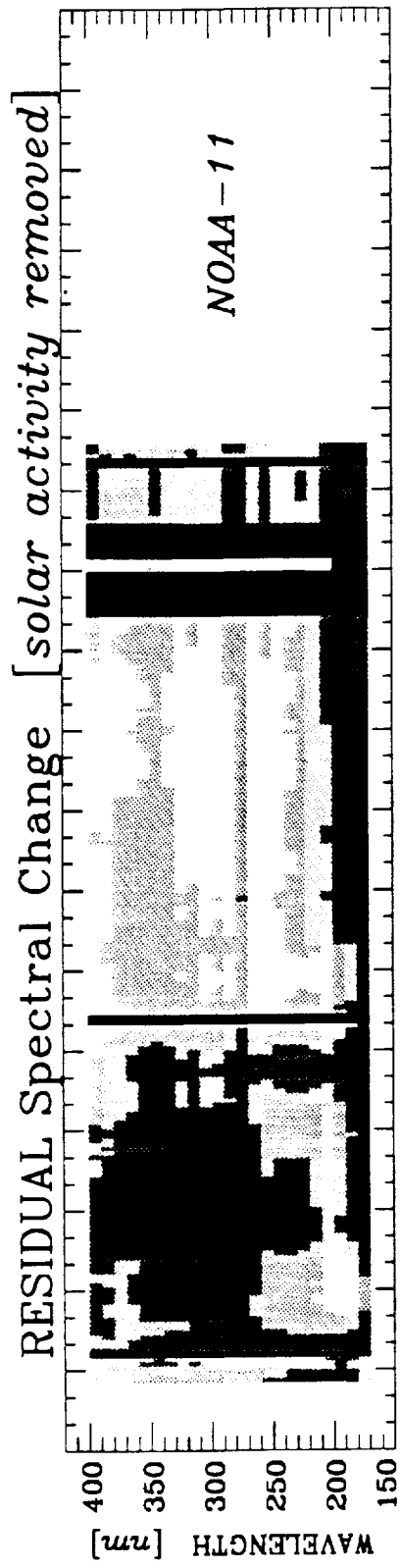
Solar Irradiance Data at 200–208 nm

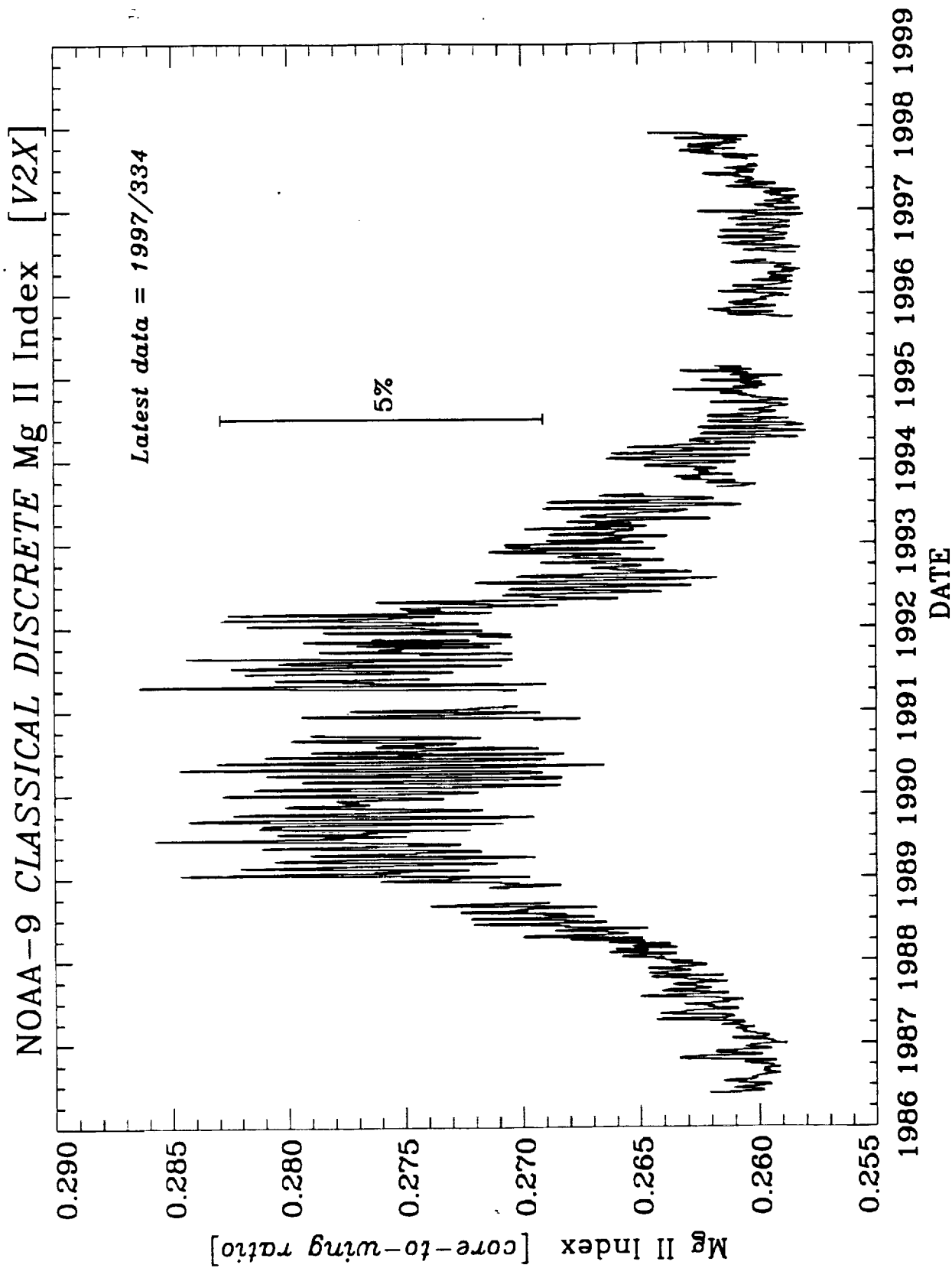




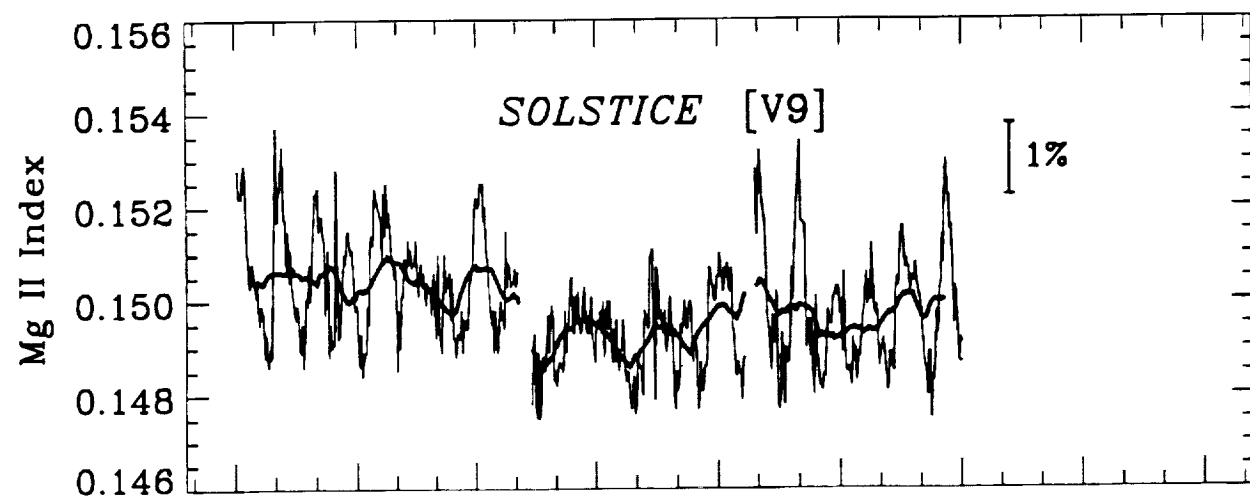
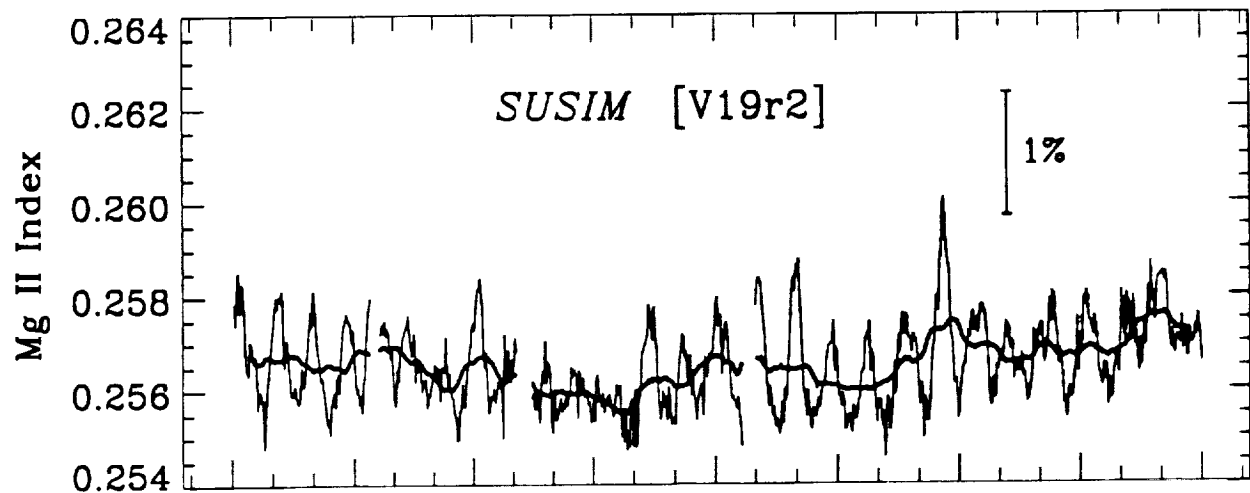
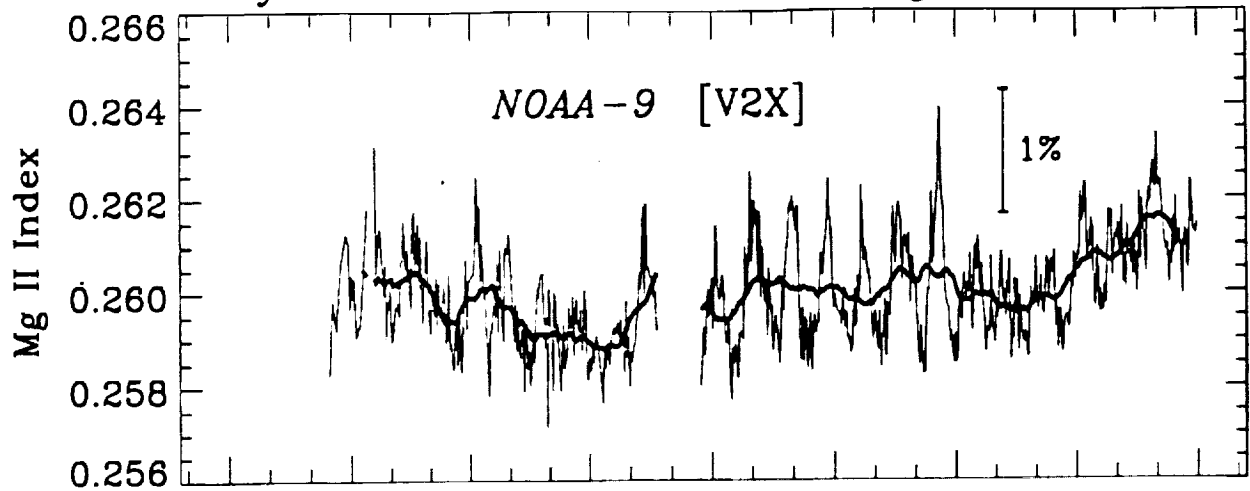








Cycle 23 Solar Minimum: *Mg II Indexes*



July 1995 Jan 1996 July 1996 Jan 1997 July 1997
DATE

Conclusions

- Determination of solar minimum date from daily spectral irradiance data sensitive to noise, long-term calibration.
- Minimum date for smoothed time series more consistent spectrally (late April 1996 for SUSIM, SOLSTICE between 190-250 nm). Many points fall within small range of minimum value.
- Mg II index less sensitive to calibration error. Minimum date based on daily values also impacted by noise. Smoothed Mg II time series from NOAA-9, SUSIM, SOLSTICE agree on minimum date for Cycle 22 within 1-2 weeks (late April 1996).
- NOAA-9, NOAA-11 SBUV/2 data available on-line at
<http://ssbuvs.gsfc.nasa.gov/solar.html>